

THE 1992 NATIONAL CENSUS OF PINK-FOOTED AND GREYLAG GEESE IN BRITAIN

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SUMMARY

The 33rd consecutive census of Pink-footed and Greylag Geese in Britain took place in autumn and early winter 1992. Two discrete counts were undertaken, recording maxima of 197,861 Pink-footed Geese in October and 98,144 Greylag Geese in November. The Pink-footed Goose total represents a 15% decrease compared with 1991, and the Greylag Goose population estimate has increased by 11 % over the previous year. Both species bred poorly in 1992, with 9.7% and 11.1 % young and brood sizes of 1.67 and 2.00 young/pair for Pink-footed and Greylag Geese, respectively. However, breeding success for both species was better than for other high latitude breeding geese that winter in Britain and Ireland.

The counts are believed to be a close estimate of the true population due to good coverage and co-ordination and reasonable counting conditions. However, some observers reported that some birds may have been missed giving a revised estimate of 200,000-210,000 Pink-footed and 100,000 Greylag Geese. Regional distribution of the birds and the importance of key sites is discussed. A summary of the WWT grey goose ringing programme is provided.

INTRODUCTION AND METHODS

The 33rd consecutive national census of Pink-footed Geese *Anser brachyrhynchus* and Greylag Geese *Anser anser* was conducted in autumn and early winter 1992. The methods followed previous years with, as in 1990 and 1991, two discrete counts being made. The majority of observations were conducted by volunteers, usually as dawn or dusk counts at known roost sites, although, in some areas, where the locations of roost sites were poorly known, daytime counts of feeding birds were made.

WEATHER AND CONDITIONS

Counts made on 17/18 October were generally good with light, variable, northerly winds, and occasional showers and sunshine reported from many localities, particularly in the north. The weather in November, however, was less conducive to goose counting with mist and fog reported from the Lothians and parts of Tayside, snow from Fife, thick cloud from Aberdeen and showers and dull conditions from other areas. Despite this counters did not report that these conditions severely

hampered their count estimates. Once again there were very few reports of birds being noted as present from their calls but conditions prevented a count from being made.

The full moon was on 11 October and 10 November thus having little effect on counts in both months. There were only a few reports of night feeding where birds may have roosted on fields rather than flying to lochs.

Some counters indicated that there had been a relatively poor harvest with plenty of spilled grain present in the stubble fields. Others suggested that the agricultural policy of 'set-aside' may be beginning to have an effect on the distribution of geese - large parts of one estate in Strathallan that formerly grew cereals being completely turned over to set-aside.

COVERAGE

A total of 141 sites were covered by the censuses representing a slight decrease on the good coverage in 1991 although it is reassuring to note that all of the important sites were covered.

RESULTS AND DISCUSSION

TOTAL NUMBERS

Pink-footed Geese

The count of 197,861 Pink-footed Geese in Britain in October 1992 (Table 1) represented a 15% decline compared with October 1991 (Cranswick & Kirby 1992). The count for November 1992 (167,512) was, however, only 6% lower than the corresponding total counted in November 1991 (178,736). Counting conditions were generally good in both months. For October, there were few suggestions that birds had been missed, and in view of the large numbers of sites covered, it seems likely that the number is close to the true population size.

Once again the 1992 counts reveal a reduction (approximately 15%) between October and November an apparent loss of 30,000 birds (note, however, that in October *Loch Tullybelton*, Tayside, held 5,300 Pinkfeet and *Loch Mullion*, Tayside, held 2,550, but neither was counted in November). Nonetheless, this complements the suggestion by Newton *et al.* (1990) that a more accurate estimate of the Pinkfooted Geese population can be obtained in October before birds start to disperse widely within Britain.

At five sites it was reported that realistic estimates were not possible and these probably depressed the total October count: 500 (minimum) counted at *Upper Cowgill Reservoir*, Strathclyde, the remainder lost in mist (3,000 roosted there on 8 October); 17,700 recorded at *Montrose Basin*, Angus, where 20,000 had been roosting regularly just before the count - night feeding may have contributed to a low count; c.2,000 estimated at *Crombie*, Angus, as a 'dense flock' flew in after dusk; c.1,000 counted in fields near *Lake of Menteith*, Stirling - a roost count was not possible; and 14,650 at *Loch Leven*, Tayside, which was lower than the 23,079 counted on 10 October and possibly due to night feeding (some birds seen coming in to roost at dawn). In all, these may account for a further 14,000 birds although this is largely based on 8,000 'missing' from *Loch Leven* - giving a revised population estimate nearer 210,000.

Table 1. The numbers of Pink-footed and Greylag Geese recorded in Great Britain in October and November 1992. The number of sites counted is also given.

DISTRICT/REGION	OCTOBER			NOVEMBER		
	Sites	Pinkfeet	Greylag	Sites	Pinkfeet	Greylag
Shetland	-	nc	nc	-	nc	nc
Orkney	7	43	3,934	6	2	3,219
Western	-	nc	nc	-	nc	nc
Caithness	1	1	6,800	1	0	4,601
Sutherland	2	0	2,105	5	0	5,433
Ross & Cromarty	6	22	17,099	4	0	8,909
Inverness/Nairn	2	0	3,400	3	52	543
Badenoch & Strathspey	1	0	700	1	0	1,057
Moray	3	0	7,290	3	24	11,000
Banff & Buchan	1	19,350	850	1	18,500	50
Gordon/Aberdeen	4	4,360	11,071	4	3,510	13,843
Kincardine & Deeside	1	0	6,620	1	0	17,750
Angus/Dundee	11	24,000	3,597	11	35,567	1,968
Perth & Kinross	16	63,631	12,067	18	31,892	11,817
Central	4	2,545	427	5	2,704	748
Fife	14	8,235	868	14	10,700	1,204
Argyll & Bute	5	0	376	5	0	385
Glasgow *	3	0	1,110	3	0	1,873
Clydesdale	1	500	0	1	4,300	0
Stewartry /Wigtown	6	2	4,659	3	0	2,783
Annan. & Eskdale/Nithsdale**	3	4,552	509	2	2,305	352
East/Midlothian	6	13,832	1,197	6	9,843	1,860
Edinburgh/W est Lothian	4	120	1,147	4	337	1,630
Borders **	7	16,220	2,700	7	2,750	655
Tweeddale *	2	24,000	7	2	8,000	0
Northumberland	8	28	2,927	8	4	4,050
Cumbria **	5	144	989	5	252	1,827
Lancashire and Merseyside	2	14,560	0	2	24,509	0
Humberside	1	466	206	1	586	164
Lincolnshire	3	0	0	3	0	2
Norfolk	3	1,250	508	3	11,675	421
TOTAL	,130	197,861 <u>1</u>	93,163 <u>1</u>	132 <u>1</u>	167,512	98,144

* includes Bearsden & Milngavie, Clydebank, Cumbemauld & Kilsyth, Cumnock & DOOD Valley, Dumbarton, East Kilbride, Eastwood, Glasgow City, Hamilton, Inverclyde, Kilmarnock & Loudoun, Kyle & Carrick, Monklands, Motherwell, Renfrew and Strathkelvin.

** for convenience, counts from the Solway Firth are included in the Annandale & Eskdale/Nitbsdale total even though some birds roost and feed on the Cumbrian side of the estuary.

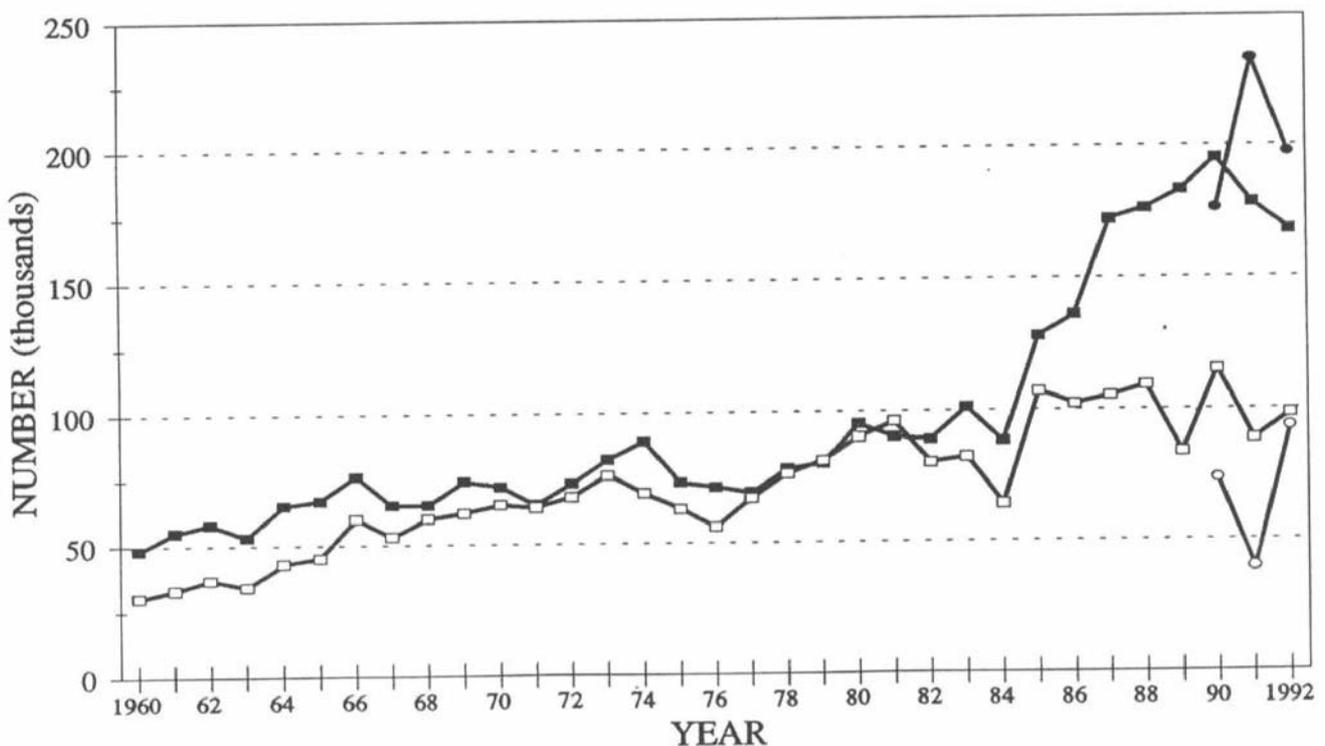
*** includes Ettrick & Lauderdale, Roxburgh and Berwickshire.

Greylag Geese

The count of 98,144 Greylag Geese in Britain in November 1992 is an increase (11%) on the population estimate for 1991. The suggestion, based on the 1991 counts, that the number of Greylags wintering in Britain was declining, perhaps suffering from intensive hunting pressure at some sites, may still hold, and clearly this needs further investigation. However, counts in the last ten years (Figure 1) show a population of approximately 100,000 which is not increasing. The relatively poor breeding success in 1992 suggests that the 1991 population estimate may have been an underestimate. In comparison to the 1991 counts, the Greylags had arrived early from Iceland - the October count comprising 95% of the November population estimate. In previous years, less than 50% of the total have arrived by the first count date. The closeness of the two counts in 1992 allows a comparison of the distribution of flocks (Figure 2).

At six sites counts were not accurate or may not have referred to Icelandic birds (see Discussion) and these probably affected the November population estimate: 308 at *Langtoft Gravel Pits*, Lincolnshire, were considered feral, as were 105 counted at *Low House*, Cumbria, 205 in the *Upper Tay/Tummel Valley*, Tayside, and 109 at *Threipmuir Reservoir*, West Lothian; 250 counted at *Ballo Reservoir*, Fife, was considered a minimum count as some may have left the roost before dawn; and perhaps 100 were obscured (and uncountable) at *Loch Clunie*, Tayside. Overall, the numbers involved are low and conveniently compensatory, however, *Long Loch*, Angus, held 1,000 Greylags in October but, unfortunately, was not counted in November. A revised population estimate is therefore nearer 100,000.

Figure 1. The numbers of Pink-footed (closed symbols) and Greylag (open) Geese recorded by WWT censuses in November (squares) and October (circles), 1960 to 1992.



REGIONAL DISTRIBUTION WITHIN BRITAIN

The distribution of Pink-footed and Greylag Geese by region/district in October and November 1992 is shown in Table 1, whilst Table 2 shows the gross regional distribution of geese. Table 3 shows the principal resorts of both species and Figure 2 show distribution maps of counts.

Pink-footed Geese

10 October the majority of birds (50%) were recorded in east central Scotland (Tayside, Central and Fife). Over one quarter of the total was in the Lothians and Borden, and just over 10% was found in eastern Grampian. This pattern is remarkably similar to 1991, the notable exceptions between 1991 and 1992 being: a decrease of 20,000 birds recorded in Perth & Kinross, a decrease of 8,000 in East/Midlothian, a decrease of 8,000 in Tweeddale and an increase of 5,500 recorded in Lancashire. By November there was, as expected, a movement south, with increases in Lancashire and Norfolk. Interestingly, the numbers of Pinkfeet in Angus and Dundee increased by 50% between October and November, whilst during the same period in 1991 the number fell by 20%.

Greylag Geese

Clearly Greylag Geese had arrived early in autumn 1992 - a marked difference from 1991. Between October and November in 1991 the number counted had risen from 38,919 to over 88,000 (an increase of 125%) but in 1992 the October and November counts were quite similar (an increase of only 5%). Notable concentrations in October 1992 were found in Highland Region, which accounted for 32% of the population, although groups were already reported from more southern areas with 17% of the population in Tayside. By November the groups had become a little more dispersed, Highland region now accounting for only one fifth of the population whilst Grampian region now supported 43% - a notable increase in numbers occurring in Kincardine and Deeside. In other areas the counts for October and November were very similar.

Table 2. Gross regional distribution of Pink-footed and Greylag Geese in Britain in October and November 1991, expressed as a percentage of the maximum count for each species.

AREA*	PINK-FOOTED GOOSE		GREYLAG GOOSE	
	Oct	Nov	Oct	Nov
North Scotland	0.0	0.0	40.2	28.1
North-east Scotland	12.0	11.1	17.6	34.5
East-central Scotland	49.7	40.9	20.0	18.6
South-east Scotland/North-east England	27.4	10.6	9.4	9.7
South-west Scotland/North-west England	2.6	3.5	9.0	8.5
West England	7.4	12.4	0.0	0.0
East England	0.9	6.2	0.8	0.6
Total	100	84.7	97.0	100

* areas are defined as follows:

North Scotland: Shetland, Orkney, Western Isles,

Highland North-east Scotland: Grampian

East-central Scotland: Tayside, Central. Fife

South-east Scotland/North-east England: Lothian, Borders, Northumberland

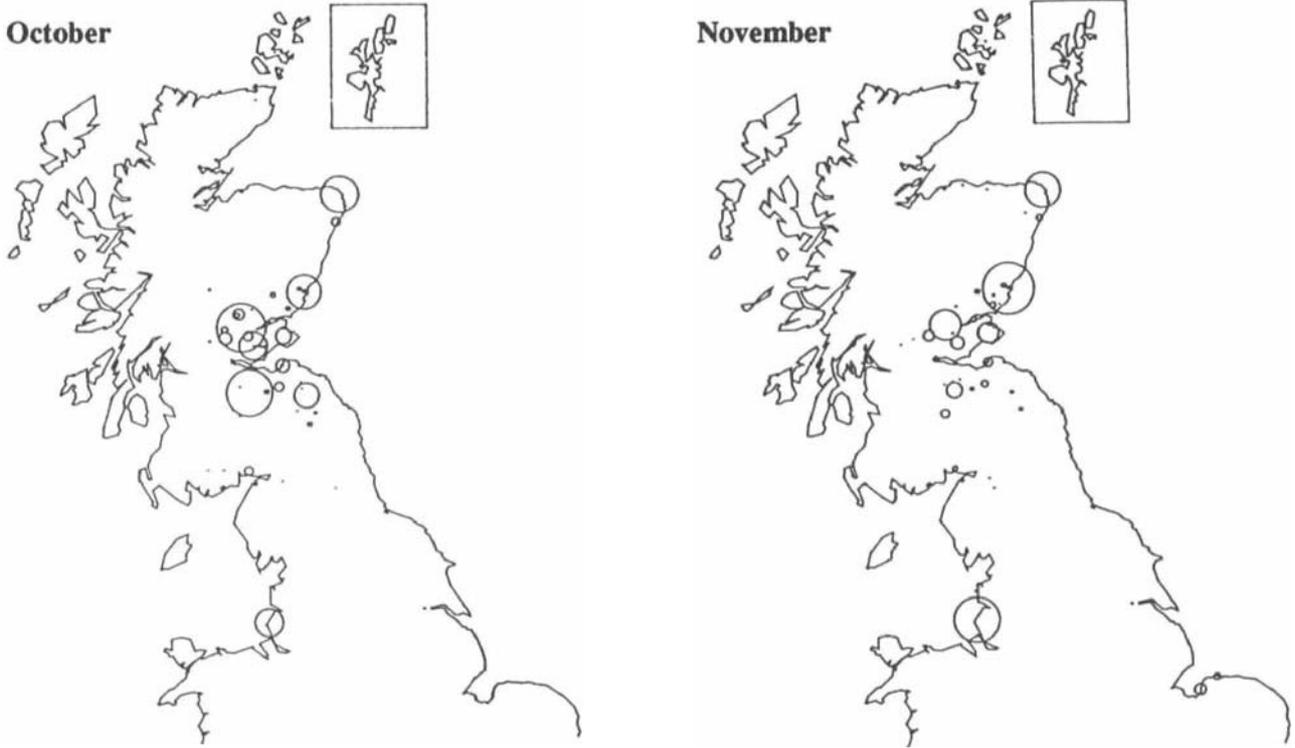
South-west Scotland/North-west England: Strathclyde, Dumfries & Galloway.

Cumbria West England: Lancashire. Merseyside

Bast England: Humberside, Lincolnshire, Norfolk

Figure 2. The location of Pink-footed and Greylag Geese on census dates in 1992.

Pink-footed Geese: Circle size is proportional to the number of birds (the largest circle in October represents 25.500 birds)



Greylag Geese: Circle size is proportional to the number of birds (the largest circle in October represents 17.750 birds)

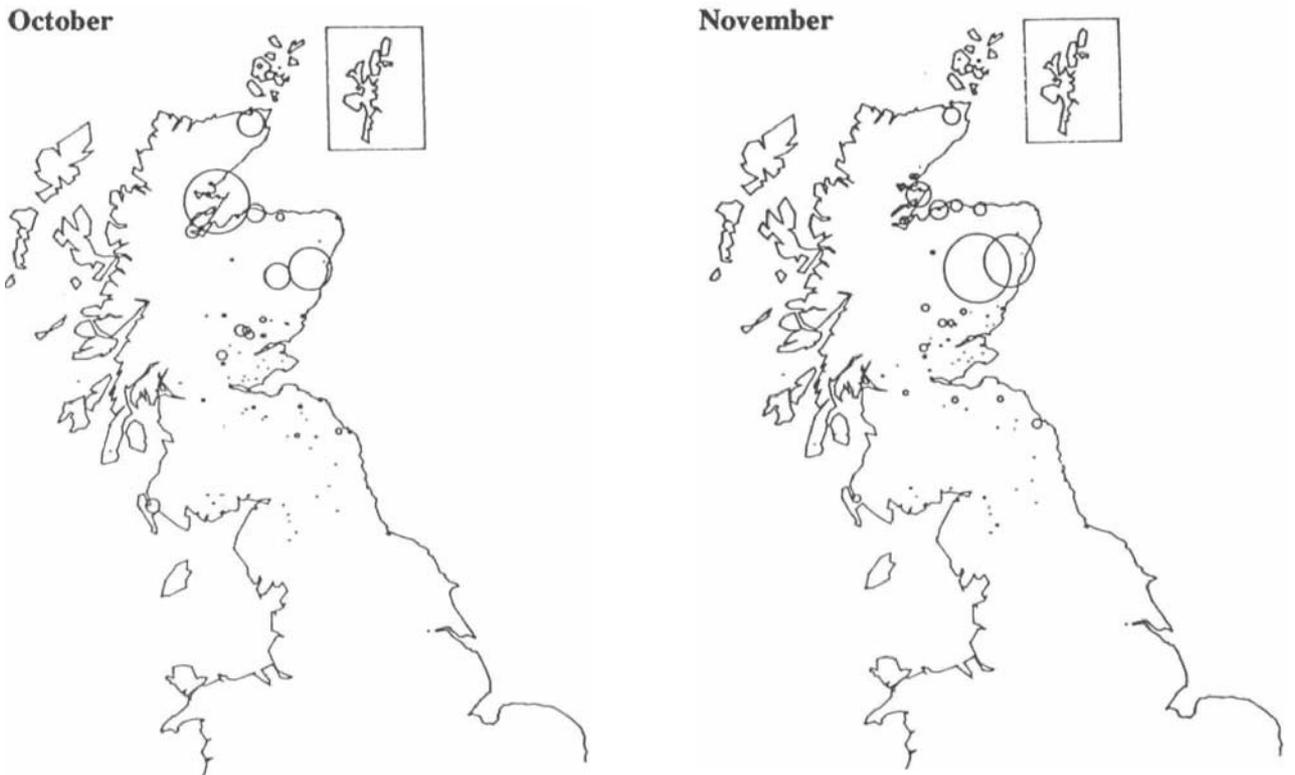


Table 3. Principal Pink-footed and Greylag Goose resorts counted in Autumn 1992. Columns show counts from the top ten sites for each species, the site count as a proportion of census totals and site count as proportion of average winter maxima from the last five years (Cranswick *et al* 1992)

PINKFEET

Census Total	OCTOBER			NOVEMBER			
	A	B	C	D	E	F	G
Dupplin Loch	25,500	12.8	70	15,700	9.3	43	36,360
West Water Reservoir	24,000	12.1	77	8,000	4.8	26	31,197
Loch of Strathbeg	19,300	9.7	66	18,500	11.0	64	28,740
Montrose Basin	17,700	8.9	81	27,000	16.1	124	21,800
Loch Leven	14,650	7.4	44	6,730	4.0	43	15,556
South west Lancashire/Merseyside	14,560	7.4	44	23,465	14.0	71	32,967
Hule Moss	12,850	6.5	90	1,450	0.8	10	14,218
Cameron Reservoir	8,235	4.2	106	10,700	6.4	139	7,718
Aberlady Bay	7,000	3.5	68	4,663	2.8	45	10,279
Carsebreck Lochs and Strathallan	6,200	3.1	55	5,450	3.3	48	11,308

GREYLAGS

Census Total	OCTOBER			NOVEMBER			
	A	B	C	D	E	F	G
Dinnet Lochs	6,620	7.1	42	17,750	21.0	112	15,800
Loch of Skene	10,904	11.7	97	13,440	13.7	119	11,291
Loch Eye	16,842	18.1	146	6,574	6.7	57	11,549
Findhorn Bay	490	0.5	12	4,900	5.0	123	3,983
Caithness (consolidated)	6,800	7.3	189	4,601	4.7	128	3,604
Loch Spynie	4,800	5.2	65	3,100	3.2	42	7,410
Lower Bogrotten	2,000	2.1		3,000	3.0		na
Holburn Moss	1,480	1.6	61	2,500	2.5	103	2,438
Munlocby Bay	235	0.3		2,230	2.3		na
Lochinch	3,600	3.9	135	2,150	2.2	81	2,660

A - October site count

B - Site count as a percentage of October

C - October site count as a percentage of five year mean (G)

D - November site count

E - Site count as a percentage of November census

F - November site count as a percentage of five year mean

G - Five year mean

PRINCIPAL CONCENTRATIONS

Pink-footed Geese

Over 50% of the October total was found at only five sites: *Dupplin Loch*, Tayside (25,500), *West Water Reservoir*, Borders (24,000). *Loch of Strathbeg*, Grampian (19,300), *Montrose Basin*, Angus (17,700) and *Loch Leven*, Tayside (14,650) (see Table 3). In all, Pink-footed Geese were recorded at only 60 sites either in October or November (Figure 2). Among other counts received, notable maxima away from the census dates include: 35,500 at *Montrose Basin* on 23 October; 30,650 at *Loch of Strathbeg* on 27 October; 28,880 in *South West Lancashire* on 6 December; 27,000 at *Montrose Basin* on 18 November; and 25,000 at *West Water Reservoir* on 19 October.

Greylag Geese

In November, over 45% of the total was found at only four sites: *Dinner Lochs*, Grampian (17,750), *Loch of Skene*, Grampian (13,440), *Loch Eye*, Highland (6,574), and *Findhorn Bay*, Grampian (4,900) - the first two sites alone accounting for one third of the population. In all, Greylag Geese were recorded at 109 sites in either October or November (Figure 2). In addition to the census counts, the following were recorded: a series of counts at *Dinner Lochs* recording over 10,000 birds on 20 occasions with a maximum of 21,650 there on 29 November, and 5,050 at *Drummond Pond*, Tayside, on 25 October.

BREEDING SUCCESS

Pink-footed Geese

A total of just over 17,000 Pink-footed Geese was aged at various localities in Scotland and in north Norfolk. Birds were also aged at Martin Mere in Lancashire. although these data were excluded from the analysis since they were collected in mid-September (see below). Breeding success in Pink-footed Geese was comparatively low, with 9.7% young observed in sample flocks (table 4). This represents the lowest value recorded since 1977 (8.5%) and continues an apparent decline in recent years (Figure 3) - however, short runs of data need to be treated with caution (CL Fox *et al.* 1988). Mean brood size (1.73) was also less than average. These results are, nonetheless, comparable with most other high latitude and Arctic breeding geese that wintered in Britain in 1992/93. Dark-bellied Brent Geese (0% young), Greenland Barnacle Geese (4%), Svalbard Barnacle Geese (5%), Greenland White-fronted Geese (5%), and European White-fronted Geese (6%) all appear to have had a poor breeding year. Geese from both west and east Greenland, from Svalbard and from across the Russian Tundra failed to breed in 1992, and, although Iceland is sub-Arctic, the low breeding performance was reflected there also.

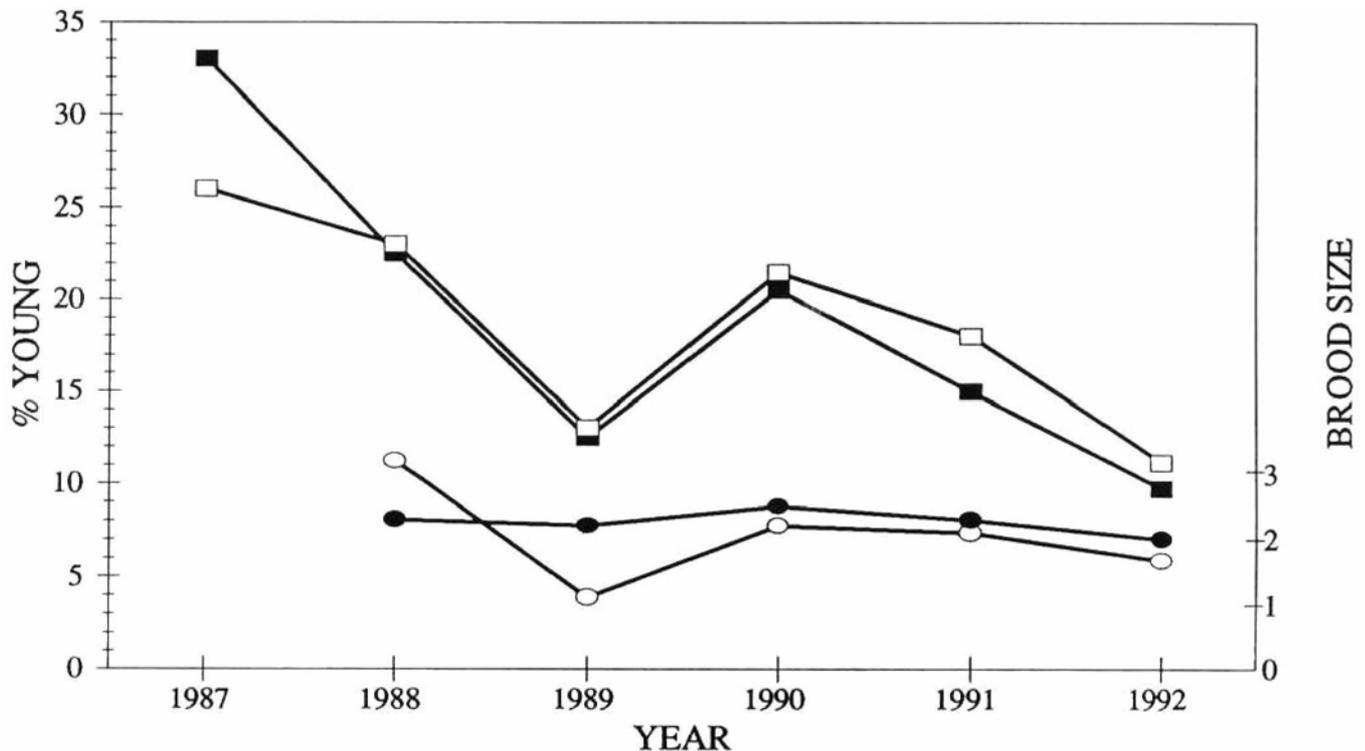
Table 4. The proportion of young and average brood size in Pink-footed and Greylag Goose flocks in autumn and early winter of 1992. (Regions are defined in Table 2)

	Region	No. of flocks	Total aged	% Young	no. of broods	Brood size
Pink-footed Goose	North-east Scotland	9	3,956	10.19	57	1.86
	East-central Scotland	11	6,688	6.52	187	1.58
	South-west Scotland	2	1,224	4.74	32	1.90
	East England	6	5,579	14.32	nc	nc
	Total	28	17,447	9.7	276	1.67
Greylag Goose	North-east Scotland	3	2,150	11.53	77	1.94
	East-central Scotland	5	2,950	10.85	76	2.08
	Total	8	5,100	11.1	153	2.00

Greylag Geese

Fewer data were received for Greylag Geese, and these were provided by one observer (M.A. Ogilvie) for seven flocks in Scotland during mid-November. Greylag breeding success was also poor in 1992, with only 11.1 % young observed in sample flocks (Table 4), although the mean brood size (2.00) was just below average. Despite a fluctuating proportion of young in the population, the brood size in Greylag Geese remains relatively constant (Figure 3).

Figure 3. The percentage of young (squares) and brood size (circles) for Pink-footed (closed symbols) and Greylag (open) Geese, recorded by WWT censuses, 1987 to 1992.



DISCUSSION

We consider that the 1992 counts, made over single weekends and in reasonable conditions, provide accurate population estimates for both species. Figure 1 shows the population estimates for the period 1960-92. In 1990, 1991 and 1992 counts have been made in both October and November. Population estimates for Pink-footed Geese have, rightly, been based on the October counts, however, the traditional November population estimates are also shown for comparison. The importance of, and differences between, the October and November counts will become apparent over the coming years, particularly if, in some years, some geese may still be in Iceland in the first part of October. Certainly some birds are shot between the two counts, but hunting estimates show that this might only account for approximately 3,000-5,000 birds (based on annual bag of 15,000-26,000 birds, BASC 1991).

Despite poor breeding, the 1992 population estimate for Pink-footed Geese is lower than would be expected from estimated survival rates and the 1991 total (232,000). However, the counts in October 1991 were unusual in that they were not made over a single weekend and it is possible, therefore, that the census in 1991 may have produced an inflated total as a result of some double-counting due to birds moving between sites counted on different weekends.

The situation for Greylag Geese is slightly clearer. The totals for the October and November counts are very close and show that the geese had arrived from Iceland earlier than in 1991, and indicate that

both counts were comprehensive and that few birds were missed. However, the timing of the 1992 autumn migration was probably an exception to the rule and it is traditionally thought that many Greylags remain in Iceland at the time of the October counts, although this highlights the effectiveness of counting on two dates in the autumn.

It has previously been noted that a small component of the wintering Greylags recorded during the autumn counts do not belong to the Icelandic breeding population (Cranswick & Kirby 1992). It is worth considering these flocks/populations in an attempt to evaluate their significance to the population estimates we publish. The native population on the Uists, Coll & Tiree and westernmost fringes of north-west mainland Scotland numbers about 3,500 (Owen *et al.* 1986, Mitchell 1992) and is largely sedentary. No 1992 autumn counts were received from the Uists (c.2,000 birds) or from Coli & Tiree (c.800). The Icelandic birds tend to fly over these areas and winter further south and east (Figure 2) and there is little or no interchange between the two populations (Mitchell 1992). The remaining native birds breed in small numbers on the west mainland (e.g. Sutherland) and adjacent islands in the eastern Minch and, although a population estimate is not known, it is thought to number about 500 birds (Owen *et al.* 1986).

Delany (1992) estimated that a further 2,340 re-introduced Greylag Geese summered in Scotland. The largest of these groups (c.1,500) is in south-west Scotland, established around 1930 by the release of young hatched from eggs brought from the Uists. Another group (c.300) was found in Orkney, although the origin of these birds is not known.

In summary, the native and re-introduced birds probably number about 6,000 in all - no more than 6% of the total wintering population. Whilst monitoring of the Uists and Coli & Tiree breeding Greylags (i.e. the principal native groups) continues to be carried out separately during August we can conveniently deduct 3,000 native birds from the wintering population estimate (if counts of these birds are submitted). Thus, even if counts are submitted from areas which re-introduced birds are thought or known to frequent, they would constitute less than 3% of the wintering population estimate.

It is interesting to note the wide variation in the proportion of young observed from different regions in northern Britain - from 14% in north Norfolk to only 5% in south-west Scotland (Table 4). There are clearly temporal and spatial factors affecting when family parties migrate and where they winter. This is reflected in the results obtained and must be investigated further to ensure that we are obtaining accurate assessments. Over 700 birds were aged at Martin Mere in Lancashire but these have been excluded from the analysis since they were checked in the second half of September. It is reasonably well established that the first flocks to arrive in Britain in autumn contain a higher proportion of families than later arrivals (M.A. Ogilvie & H. Boyd in litt.). We should therefore favour age counts made in late October and November by which time it is thought that the flocks have become more homogenised. There may be variation between age ratios in different areas although within the constraints of the sample size these may be obscured by the timing of the age counts, i.e. do families tend to travel further south? And does homogenisation of flocks take longer further south?

There is clearly a need for standardising the timing of the age counts, perhaps only considering those carried out in November, and a need to review the findings of previous age ratios to investigate temporal and spatial variation.

Reports are still accumulating of the presence of Continental (particularly Italian) shooting parties causing disruption to roosts - initial investigations into the scale and distribution of this activity are being carried out by the British Association for Shooting and Conservation. Although evidence is largely anecdotal and very difficult to quantify, goose counters can contribute valuable data. The roost at *Abercairney Lake*, Tayside, was known to have been heavily disturbed by shooting, although the exact number of geese shot was not known.

WWT RINGING STUDIES OF PINK-FOOTED AND GREYLAG GEESE

A project investigating movements, population processes and habitat selection was established by WWT in 1987 and to date a total of 1,264 Pink-footed Geese has been ringed at Martin Mere, Lancashire (see Fox *et al.* 1987 for background). In addition, a further 140 birds have been marked at four sites in Scotland. Each bird is marked with a metal ring issued by the British Trust for Ornithology (BTO) and a white, plastic ring engraved with three letters which, in favourable conditions, can be read with a telescope at up to 200 m. Recoveries and, more importantly, sightings of individually marked Pinkfeet have revealed patterns of within-winter movements and a degree of between-year winter site faithfulness at least for some birds. e.g. CAP and CAZ, a pair ringed at Martin Mere in 1989, have spent at least part of every winter since in the same corner of the same golf course at Southport, Lancashire. There is some evidence of site-faithfulness to staging areas too, particularly in the spring.

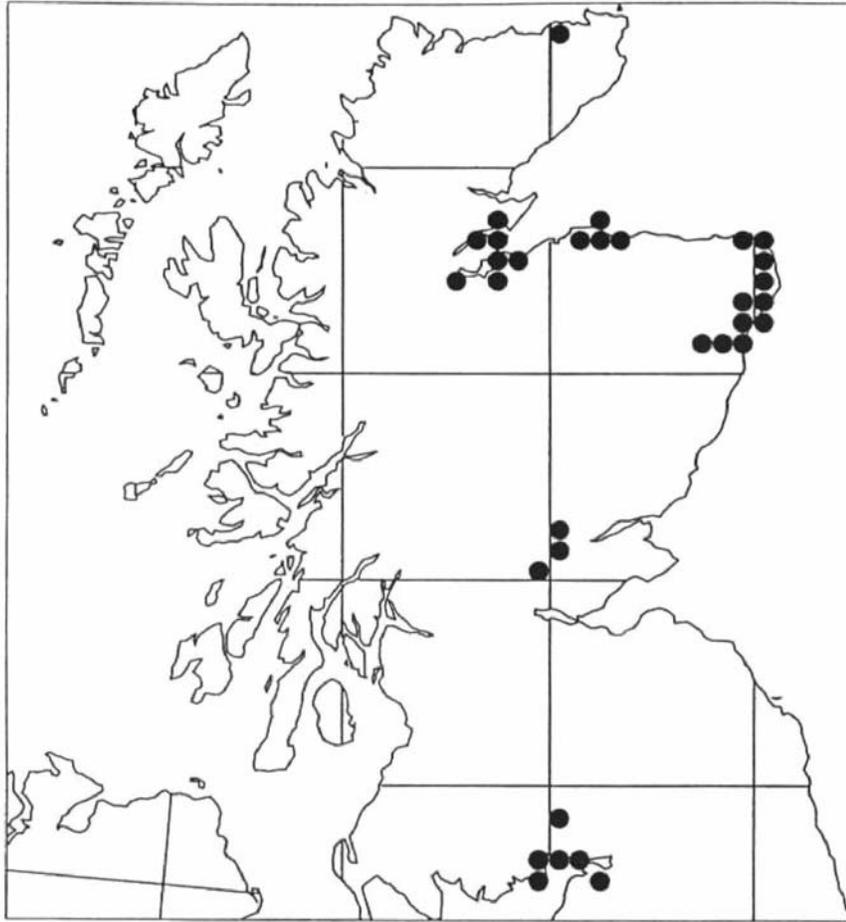
Sightings aid our understanding of the timing of the rapid southward movements of flocks during the early autumn and of the northward spring migration (Figure 4). The sightings and recovery data will complement the enormous data set collected during the 1950s when the Wildfowl Trust undertook mass ringing at the moulting grounds in Iceland (13,000 birds) and rocket netting during the autumn in northern Britain (14,000).

Unfortunately the ringing of Icelandic Greylag Geese has not received the same amount of attention. Until 1990, only about 3,000 birds had ever been ringed in Scotland, 80% of which were caught in the 1950s and 1960s, and these have generated 550 recoveries. The recoveries have revealed patterns of movements within Britain during the winter and, to some extent, the breeding distribution in Iceland. However, little ringing has been done recently, at a time when the population appears to be declining in some areas. In an attempt to address this, over 200 wintering Greylags have been caught at *Loch Eye*, Easter Ross, during 1992/93 by the Highland Ringing Group. Again, each has been marked with a BTO ring and an engraved plastic ring - some were marked with a temporary yellow dye on the under-tail coverts. Early sighting data suggest that *Loch Eye*, already established through wildfowl counts as a key staging and wintering roost site, provides refuge in November for many birds that winter elsewhere in Scotland. Colour-ringed birds have been seen in Grampian and Central, and one bird was seen near Stranraer. Five records of colour-ringed birds have also been reported from Iceland in April 1993.

The colour ringing of Pinkfeet and Greylags will continue this winter (1993/94) and grey goose counters are encouraged to check for the presence of rings or dyed birds. Even sightings with incomplete details (Le. the letters on the ring were not read) are extremely useful.

Records of Pink-footed and Greylag Geese away from traditional areas are of interest and the presence of marked individuals aids our interpretation of the origin of flocks. This is particularly important for Greylags which may be of part of the re-introduced stock. Pink-footed Geese are uncommon in Ireland, so the presence of a flock of 44 at Wexford Slobs, Co. Wexford, throughout the 1992/93 winter was notable. One of the birds had been ringed at Martin Mere, indicating that this flock probably normally wintered in northern Britain. It will be interesting to note whether a wintering tradition is established there.

Figure 4. Distribution of sightings of colour-ringed Pink-footed Geese ringed at Martin Mere, Lancashire, and seen in either March or April (plotted by 10 km square).



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